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EXAMINER

CORRIELUS, JEAN M

ART UNIT	PAPER NUMBER
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2172

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/844,043

Applicant(s)

HARVEY, RICHARD HANS

Examiner

Jean M Corrielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

1. This office action is in response to the amendment filed on December 22, 2003, in which claims 1-29 are presented for further examination.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new grounds(s) of rejection.

***Drawings***

3. Applicants are required to furnish the formal drawings in response this office action. No new matter may be introduced in the required drawing. Failure to timely submit a drawing will result in **ABANDONMENT** of the application.

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MEP. 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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*Claim Rejections - 35 U.S.C. 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 7, 8 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted prior art (see specification pages 1-6, line 11).

As to claim 1, Applicant's admitted prior art discloses the claimed receiving a service query, including a filter having one ore more filter items as a X.500 search service is performed using arguments which indicate where to start the search, the condition to apply to the search (filters) and what information should be returned (selection), wherein a user may wish to interrogate a directory in order to locate titles of managers of an organization who have salaries above \$60,000.00, and have a mobile phone listed in the database or who are not in certain offices of the organization, wherein such a request could carried by way of a search query wherein:

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title=manager AND salary > 60000 AND (mobilePhone present OR (NOT (locality=Melb\* OR locality = Syd\*))), which can express as a logical expression  $A.B.(C+!(D+E))$ ; the filter items are presented by letters (A,B, C, D and E) (see applicant's admitted prior art, specification page 1, line 18-page 2 line 11); expanding the filter as using logic principle, boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression  $!(A.B)$  results in the filter terms :  $!A + !B$  (see applicant's admitted prior art, specification page 3, line 12-page 4 line 20); and applying a condition test to each filter item to determine if the filter item includes a Not connective and if the filter item is one of two types of filter items after a complex filter has been expanded into a number of simpler filter terms, the resulting filter terms  $!A + !B$  wherein ! Is a NOT connective in the filter, which converted to SQL statement (see applicant's admitted prior art, specification page 2, line 15-page 2 line 10).

As to claim 7, Applicant's admitted prior art discloses the claimed wherein the condition test further includes determining if each filter item can be pre-evaluated to false, such that the expanded term can be ignored as using logic principle, boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also

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known as a sum of term; wherein the expression  $!(A.B)$  results in the filter terms :  $!A + !B$  (see applicant's admitted prior art, specification page 3, line 12-page 4 line 20).

As to claim 8, Applicant's admitted prior art discloses the claimed wherein the filter is expanded to a minimum set of terms as using logic principle, boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression  $!(A.B)$  results in the filter terms :  $!A + !B$  (see applicant's admitted prior art, specification page 3, line 12-page 4 line 20).

As to claim 17, Applicant's admitted prior art discloses the claimed receiving a service as a X.500 search service is performed using arguments which indicate where to start the search (see applicant's admitted prior art, specification page 1, line 18-page 2 line 11); applying a filter to the service query resulting in zero or more filter items the condition to apply to the search (filters) and what information should be returned (selection); wherein a user may wish to interrogate a directory in order to locate titles of managers of an organization who have salaries above \$60,000.00, and have a mobile phone listed in the database or who are not in certain offices of the organization, wherein such a request could carried by way of a search query wherein:  $\text{title}=\text{manager AND salary} > 60000 \text{ AND (mobilePhone present OR (NOT (locality=Melb* OR locality = Syd*))}$ )), which can express as a logical expression

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A.B.(C+!(D+E)); the filter items are presented by letters (A,B, C, D and E) (see applicant's admitted prior art, specification page 1, line 18-page 2 line 11); and applying a condition test to each filter item to determine a form of the filter item after a complex filter has been expanded into a number of simpler filter terms, the resulting filter terms !A + !B wherein ! Is a NOT connective in the filter, which converted to SQL statement (see applicant's admitted prior art, (specification page 2, line 15-page 2 line 10).

7. Claims 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Ciccarelli US Patent no. 6,009,422.

As to claimed 28, Ciccarelli discloses the claimed a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data, wherein at least one of the tables has information used to resolve filters in a search service (col.8, lines 6-20); and a condition tester that determine whether a filter item is a type only filter item or a type and value filter item (col.4, lines 41-64).

As to claim 29, Ciccarelli discloses the claimed a computer usable medium having computer readable program code embodied on said medium, wherein the computer readable program code is for applying a condition test to each filter item of a filter to determine if the filter item is type only filter item or type and value filter item, and wherein the filter is adapted for interaction with a search service of a directory service arrangement (col.4, lines 41-64; col.8, lines 6-20).

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*Claim Rejections - 35 U.S.C. 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2-6 and 18-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (specification pages 1-4) in view of Ciccarelli US Patent no. 6,009,422.

As to claim 2, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly wherein the two types of filter items comprise a type only filter item and a type and value filter item.

Ciccarelli, on the other hand, discloses the claimed wherein the two types of filter items

comprises a type only filter item and a type and value filter item the NOT connective takes a set



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of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein the two types of filter items comprises a type only filter item and a type and value filter item, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 3, Applicant's admitted prior art discloses substantially the invention claimed. However, Applicant's admitted prior art does not explicitly wherein a logical methodology is applied to evaluate NOT connective associated with type only filter items. Ciccarelli, on the other hand, discloses the claimed wherein a logical methodology is applied to evaluate NOT connective associated with type only filter items the NOT connective takes a set of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 25). Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein

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(See Applicant's admitted prior art page 1) would incorporate the use wherein a logical methodology is applied to evaluate NOT connective associated with type only filter items, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 4, Applicant's admitted prior art discloses substantially the invention claimed. However, Applicant's admitted prior art does not explicitly wherein the logical methodology comprises a subtraction method.

Ciccarelli discloses the claimed wherein the logical methodology comprises a subtraction method (col.4, lines 62-67). Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein the logical methodology comprises a subtraction method, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

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As to claim 5, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly wherein a NOT connective associated with a type and value filter item is pushed inside the filter item, resulting in changing an operator inside the filter item.

Ciccarelli discloses the claimed wherein a NOT connective associated with a type and value filter item is pushed inside the filter item, resulting in changing an operator inside the filter item (col.4, line 8-col.5, line 25).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein a NOT connective associated with a type and value filter item is pushed inside the filter item, resulting in changing an operator inside the filter item, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 6, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly wherein the condition test further includes determining if each filter item can be pre-evaluated to true.

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Ciccarelli discloses the claimed wherein the condition test further includes determining if each filter item can be pre-evaluated to true (col.4, line 8-col.5, line 25).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein the condition test further includes determining if each filter item can be pre-evaluated to true, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 6, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly wherein the condition test determines if the filter item is a type only filter item.

Ciccarelli discloses the claimed wherein the condition test determines if the filter item is a type only filter item the NOT connective takes a set of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein

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the electronic directories, provided therein (See Applicants admitted prior art page 1) would incorporate the use wherein the condition test determines if the filter item is a type only filter item, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 19, Applicant's admitted prior art discloses substantially the invention claimed. However, Applicant's admitted prior art does not explicitly evaluating the filter item in accordance with a logical methodology if the filter item is type only form.

Ciccarelli discloses the claimed evaluating the filter item in accordance with a logical methodology if the filter item is type only form the NOT connective takes a set of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 25).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use of evaluating the filter item in accordance with a logical methodology if the filter item is type only form, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when

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specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 20, Applicant's admitted prior art discloses substantially the invention claimed. However, Applicant's admitted prior art does not explicitly wherein the logical methodology comprises a subtraction method.

Ciccarelli discloses the claimed wherein the logical methodology comprises a subtraction method (col.4, lines 62-67).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicants admitted prior art page 1) would incorporate the use wherein the logical methodology comprises a subtraction method, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 21, Applicants admitted prior art discloses substantially the invention claimed. However, Applicants admitted prior art does not explicitly wherein the subtraction method includes the use of an ANSI SQL expert clause.

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Ciccarelli discloses the claimed wherein the subtraction method includes the use of an ANSI SQL expert clause (col.4, lines 5-67).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicants admitted prior art page 1) would incorporate the use wherein the subtraction method includes the use of an ANSI SQL expert clause, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 22, Applicants admitted prior art discloses substantially the invention claimed. However, Applicants admitted prior art does not explicitly wherein the subtraction method transforms each filter item to a form that contains fewer or NOT connectives.

Ciccarelli discloses the claimed wherein the subtraction method transforms each filter item to a form that contains fewer or NOT connectives (col.4, lines 5-67).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicants admitted prior art page 1) would

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incorporate the use wherein the subtraction method transforms each filter item to a form that contains fewer or NOT connectives, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 23, Applicants admitted prior art discloses substantially the invention claimed.

However, Applicants admitted prior art does not explicitly wherein the condition test determines if the filter item is a type and value filter item.

Ciccarelli discloses the claimed wherein the condition test determines if the filter item is a type and value filter item (col.4, line 8-col.5, line 25).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicants admitted prior art page 1) would incorporate the use wherein the condition test determines if the filter item is a type and value filter item, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.



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As to claim 24, Applicant's admitted prior art discloses the claimed wherein if the filter item is a type and value form, adding SQL representing the filter item to an expression to be evaluated which may involve at least one table join (see applicant's admitted prior art, specification page 2, line 15-page 2 line 10).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein if the filter item is a type and value form, adding SQL representing the filter item to an expression to be evaluated which may involve at least one table join, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 25, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly wherein if the filter item is an inverse of the type and value filter item, pushing the NOT connective inside the filter item.

Ciccarelli discloses the claimed wherein if the filter item is an inverse of the type and value filter item, pushing the NOT connective inside the filter item (col.4, lines 5-67).

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Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein if the filter item is an inverse of the type and value filter item, pushing the NOT connective inside the filter item, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 26, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly applying the pushed NOT connective to an operator.

Ciccarelli discloses the claimed applying the pushed NOT connective to an operator (col.4, lines 5-67).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use wherein a logical methodology is applied to evaluate NOT connective associated with type only filter items, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when

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specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

As to claim 27, Applicant's admitted prior art discloses substantially the invention claimed.

However, Applicant's admitted prior art does not explicitly applying the pushed NOT is effected by inverted the operator.

Ciccarelli discloses the claimed applying the pushed NOT is effected by inverted the operator (col.4, lines 5-67).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, wherein the electronic directories, provided therein (See Applicant's admitted prior art page 1) would incorporate the use of applying the pushed NOT is effected by inverted the operator, in the same conventional manner as disclosed by Ciccarelli (col.4, line 66-col.5, line 5). The motivation being to provide maximum search flexibility when specifying potentially complex conditions which data objects must meet in order to be identified as candidates for return from a query operation.

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10. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ciccarelli US Patent no. 6,009,422 in view of Applicant's admitted prior art (specification pages 1-4).

As to claim 9, Ciccarelli discloses the a plurality of tables, each table having a plurality of rows and columns storing arbitrary data in a search service, wherein at least one of the tables is has information used to resolve filter having at least one filter item (col.4, lines 41-64; col.8, lines 6-20); and means for expanding each filter into an expanded term condition test means for determining whether each filter item includes a NOT connective and whether each filter item is one of two types of filter items (col.4, lines 41-64). Ciccarelli, however, does not explicitly disclose the claimed means for expanding each filter into an expanded term.

Applicant's admitted prior art discloses the claimed means for expanding each filter into an expanded term as using logic principle, Boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression! (A.B) Results in the filter terms:! A + !B (see applicant's admitted prior art, specification page 3, line 12-page 4 line 20).

Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to combine the teachings of the cited references, because such a combination would provide various search services, thereby information would quickly store and retrieve.

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As to claim 10, Ciccarelli discloses the claimed wherein the two types of filter items comprises a type only filter item and a type and value filter item the NOT connective takes a set of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 5).

As to claim 11, Ciccarelli discloses the claimed wherein a logical methodology is applied to evaluate NOT connective associated with type only filter items the NOT connective takes a set of document (filter item) defined by an initial condition, then removes elements from that set which meet subsequent conditions (col.4, line 66-col.5, line 25).

As to claim 12, Ciccarelli discloses the claimed wherein the logical methodology comprises a subtraction method (col.4, lines 62-67).

As to claim 13, Ciccarelli discloses the claimed wherein a NOT connective associated with a type and value filter item is pushed inside the filter item, resulting in changing an operator inside the filter item (col.4, line 8-col.5, line 25).

As to claim 14, Applicant's admitted prior art discloses the claimed wherein the condition test means further determines if each filter item can be pre-evaluated to be true as using logic principle, Boolean logic, an arbitrarily complex search filter can be expanded to a number of

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relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression  $!(A.B)$  Results in the filter terms:  $!A + !B$  (see applicant's admitted prior art, specification page 3, line 12-page 4 line 20).

As to claim 15, Applicant's admitted prior art discloses the claimed wherein the condition test further includes determining if each filter item can be pre-evaluated to be false, such that the expanded term can be ignored as using logic principle, Boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression  $!(A.B)$  results in the filter terms :  $!A + !B$  (see applicant's admitted prior art, specification page 2, line 10-page 6 line 16)

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As to claim 16, Applicant's admitted prior art discloses the claimed wherein the condition test further includes determining if each filter item can be pre-evaluated to be true, but is inverted by a NOT connective, such that the expanded term can be ignored as using logic principle, Boolean logic, an arbitrarily complex search filter can be expanded to a number of relatively simpler terms, by removing the brackets in the complex search filter, resulting in an expression which is an OR of ANDs which is also known as a sum of term; wherein the expression  $\neg(A.B)$  results in the filter terms :  $\neg A + \neg B$  (see applicant's admitted prior art, specification page 2, line 10-page 4 line 20).

### *Conclusion*

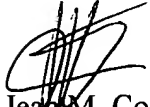
Any inquiry concerning this communication or early communication from the Examiner should be directed to **Jean M. Corrielus** whose telephone number is (703) 306-3035. The examiner can normally be reached on Tuesday - Friday (7:30 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Jean M. Corrielus

Patent Examiner

February 26, 2004